The Plant Cell, Vol. 1, i–ii, December 1989 © 1989 American Society of Plant Physiologists

Author Index

A

Aalen, Reidunn B., 1157
Albersheim, Peter, 747
Allen, Randy D., 623
Alliotte, Thierry, 81
Almoguera, Concepción, 855
An, Gynheung, 115
An, Kyungsook, 115
Anderson, Marilyn A., 483
Apuya, Nestor, 1137
Arntzen, Charles J., 1, 591
Ashbaugh, Megan, 867
Asselin, Alain, 1209
Atkinson, Angela, 483
Ausubel, Frederick, 867

B

Bacic, Antony, 511
Baden, Catherine S., 293
Barkan, Alice, 437
Barker, Susan J., 415
Barlow, Bicka, 249
Bashe, David M., 173
Batterham, Michael P., 493
Beachy, Roger N., 623
Becker-André, Michael, 707
Bedbrook, John, 201, 209
Begum, Dilara, 839
Benhamou, Nicole, 1209
Bennett, Alan B., 53
Berge, Sonja K., 191
Bernatzky, Robert, 483
Bernier, François, 623
Bevan, Michael W., 381
Biddle, Phyllis, 599
Bisaro, David M., 985
Blake, Tom, 481
Blowers, Alan D., 123
Boerjan, Wout, 81
Bogorad, Lawrence, 123
Bohnert, Hans J., 715
Bol, John F., 285
Bond-Nutter, Diane, 201
Boston, Rebecca S., 105
Botterman, Johan, 81
Bowman, John L., 37
Boyer, Scott K., 913
Boylan, Margaret T., 765
Brisson, Normand, 559
Broglie, Karen E., 599
Broglie, Richard, 599
Brown, Christopher S., 229
Budelier, Kim A., 15
Bustos, Mauricio M., 839

C

Caboche, Michel, 1111
Camirand, Anne, 559
Carson, Christian B., 523
Cashmore, Anthony R., 217, 1069
Chandler, Vicki L., 1175
Chatfield, J. Mark, 815
Chen, Che-Hong, 249
Chen, Jychian, 1175
Chérel, Isabelle, 1111
Chesnut, Ruth S., 913
Cho, Tae-Ju, 313, 329, 339
Choi, Hong K., 115
Chory, Joanne, 867
Chrispeels, Maarten J., 95, 609
Chua, Nam-Hai, 141, 351, 471, 775, 977, 1147
Chye, Mee-Len, 351
Clarke, Adrienne E., 483, 493, 501, 511
Comai, Lucio, 293
Cordes, Sabine, 1025
Coruzzi, Gloria M., 241
Costa, Michael A., 115
Craig, Stuart, 757
Cressman, Robert, 599
Cullimore, Julie V., 391
Cushman, John C., 715

D

Dangl, Jeffery L., 707
Darvill, Alan, 747
Darwish, Kamel, 1137
Datta, Ketaki, 945
Datta, Neeraj, 1069
Davies, Corinne S., 329, 339
Day, Hazel M., 391
Deak, Maria, 775
Dean, Caroline, 201, 209
Dean, Ralph A., 265, 275
Dedman, Helen, 483
Deikman, Jill, 1025
Dekeyser, Rudy A., 671
DellaPenna, Dean, 53
den Boer, Bart, 699
Deng, Xing-Wang, 645
Dennis, Elizabeth S., 25, 757
Depicker, Ann G., 671
Dickey, Lynn F., 681, 691
Dickinson, Craig D., 313, 459
Dietrich, Robert A., 73, 293
Diner, Bruce A., 591
Donaldson, Gail K., 1223
Doubrava, Nancy, 747
Drews, Gary N., 313
Dudley, Mark E., 65
Dunsmuir, Pamela, 201, 209
Dwyer, Kathleen G., 249

E

Eberhard, Stefan, 747
Edwards, Janice W., 241
Egeland, Daniel B., 633
Elliott, Robert C., 681, 691
Elmer, J. Scott, 1057
El-Sawi, Zaki, 403
Engler, Gilbert, 81
Erickson, Jeanne M., 361

F

Fang, Rong-Xiang, 141
Favreau, Mitchell, 201, 209
Feldmann, Kenneth, 1043
Fernley, Ross, 483
Finnegan, E. Jean, 757
Fischer, Robert L., 53, 313, 339, 1025
Flavell, Richard B., 569, 579
Fluhr, Robert, 881
Forde, Brian G., 391
Fraley, Robert T., 15
Fristensky, Brian A., 681
Fromm, Hillel, 977
Furuya, Masaki, 775

G

Gallie, Daniel R., 301
Gasser, Charles S., 15
Gatenby, Anthony A., 1223
Gee, Melissa A., 229
Gelvin, Stanton B., 925
Giovannoni, James J., 53
Giraudat, Jérôme, 699
Giroux, Hélène, 559
Goldberg, Robert B., 313, 339, 415, 427, 1079, 1095
Goodenough, Ursula W., 901
Goodman, Howard M., 699
Grenier, Jean, 1209
Gronenborn, Bruno, 133
Gruissem, Wilhelm, 181, 645
Guilfoyle, Tom J., 229, 815
Guiltinan, Mark J., 839

H

Hagen, Gretchen, 229
Hahlbrock, Klaus, 707, 993
Hall, Timothy C., 839
Hamilton, Douglas A., 173
Hanley-Bowdoin, Linda, 1057
Hanson, Doris D., 173
Hanson, Maureen R., 169, 1121
Harada, John J., 73, 293, 415
Harmon, Alice C., 745
Harper, Jeffrey F., 953
Hauge, Brian M., 699
Haughn, George W., 1195
Häuser, Isolde, 151
Heinstein, Peter F., 1003
Herman, Eliot M., 95
Herman, Lieve M. F., 671
Herman, Patricia L., 1051
Hershey, David R., 657
Heupel, Rick C., 73
Höfgen, Rainer, 533
Hong, Jong Chan, 937
Horgan, Roger, 403
Horn, Mark A., 1003
Hussein, Ebtissan H. A., 459

I

Ingelbrecht, Ivan L. W., 671
Inzé, Dirk, 81
Irish, Erin E., 737
Iturriaga, Gabriel, 381

J

Jahnen, Willi, 493, 501, 511
Jefferson, Richard A., 381
Jofuku, K. Diane, 427, 1079
John, Peter C. L., 1185
Jordano, Juan, 839, 855

K

Kalkan, Fatma A., 839
Katagiri, Fumiaki, 977
Kauffmann, Serge, 285
Kay, Steve A., 351, 775
Keith, Brian, 351, 775
Key, Joe L., 937
Klee, Harry J., 403
Klenz, Jennifer E., 1195
Kodrzycki, Robert, 105

Kohorn, Bruce D., 159
Kropf, Darryl L., 191
Kuhlemeier, Cris, 471
Kunst, Ljerka, 1195

L

Lalonde, Beth A., 249
Lam, Eric, 1147
Langdale, Jane A., 3
Larkins, Brian A., 105, 913, 1011
Lee, Melanie G., 1185
Legrand, Michel, 1209
Leisner, Scott M., 925
Lending, Craig R., 1011
Lessard, Philip A., 623
Linthorst, Huub J. M., 285
Lipphardt, Susanne, 151
Logemann, Jürgen, 151, 961
Long, Sharon R., 65
Lonsdale, David M., 783
Loos, William D. B., 699
Lörz, Horst, 151
Lotan, Tamar, 881
Low, Phillip S., 1003
Lubben, Thomas H., 1223
Lucas, William J., 301
Lush, W. Mary, 501

M

Maeda, Tatsuya, 515
Malik, Vedpal S., 217
Marcotte, William R., Jr., 969
Marcus, Abraham, 945
Marfà, Victòria, 747
Margossian, Linda J., 1025
Marks, M. David, 1043, 1051
Martinez-Zapater, Jose, 1195
Mascarenhas, Joseph P., 173, 665
Maslyar, Daniel J., 73, 293
Masuta, Chikara, 1165
Mauch, Felix, 447
McCarty, Donald R., 523
McClure, Bruce A., 229
McCormick, Sheila, 727
McFadden, Geoffrey I., 483
Medford, June I., 403
Meeks-Wagner, D. Ry, 25
Meshi, Tetsuo, 515
Mets, Laurens, 361
Meuwissen, Ralph L. J., 285
Meyer, Gabriele, 715
Meyerowitz, Elliot M., 37
Michalowski, Christine B., 715
Mitra, Amitava, 115
Mohnen, Debra, 747
Moonan, Francis, 699
Moritz, Robert L., 493
Motoyoshi, Fusao, 515

N

Nagao, Ron T., 937
Nagatani, Akira, 775
Nagy, Ferenc, 141
Nam, Hong-Gil, 699
Narita, Jonathon O., 181
Nasrallah, June B., 249
Nasrallah, Mikhail E., 249
Nelson, Timothy, 3, 737
Nie, Z. Q., 551
Nielsen, Niels C., 313, 329, 339, 459
Nivison, Helen T., 1121

O

O'Carroll, Cynthia, 1137
Ogren, William L., 815
Ohlrogge, John B., 889
Okada, Yoshimi, 515
Oliver, Jane E., 391
Ori, Naomi, 881
Orpin, Timothy, 483

P

Pakrasi, Himadri B., 591
Peacock, W. James, 25
Pedersen, Thomas J., 681
Peleman, Johan, 81
Perez-Grau, Luis, 1095
Peter, Gary R., 645
Peto, Charles A., 867
Pfister, Klaus, 361
Pichersky, Eran, 217
Post-Beittenmiller, Martha A., 889
Pouteau, Sylvie, 1111
Pratt, Lee, 867

Q

Quail, Peter H., 765
Quatrano, Ralph S., 191, 969

R

Rabson, Robert, 167
Radicella, J. Pablo, 1175
Rahire, Michèle, 361
Raikhel, Natasha V., 541
Revington, Gwen N., 985
Riggs, C. Daniel, 609
Robbins, Timothy P., 1175
Robert, Laurian S., 569
Robertson, Donald S., 523
Rochaix, Jean-David, 361
Rogers, Stephen G., 1057
Roy, Harry, 1035
Russell, Douglas A., 793
Russell, Sandra H., 969
Ryan, Clarence A., 115

S

Sachs, Martin M., 793
Saganich, Rebecca, 867
Sanford, John C., 123
Scallon, Bernard J., 313
Schell, Jeff, 133, 151, 665, 805, 961
Schipper, Roberta D., 427
Schmid, Katherine M., 889
Schmidt, Albert, 945
Schmitt, Jürgen M., 715
Schmitz, Udo K., 783
Schmülling, Thomas, 665
Schuler, Mary A., 633
Schulz, Wolfgang, 707
Schulze, Sabine C., 1157
Schulze-Lefert, Paul, 707
Sek, Francis J., 1185
Seurinck, Jef, 81
Shah, Dilip M., 15
Shark, Katherine B., 123
Shinozaki, Kazuo, 351
Shotwell, Mark A., 913
Siebertz, Barbara, 961
Simard, Claire, 559
Simpson, Richard J., 493
Sims, Thomas L., 313
Sivasubramaniam, Shanthi, 141
Smith, Alan G., 15
Smyth, David R., 37
Somerville, Chris, 1131
Sonnewald, Uwe, 533
Southwick, Audrey, 747
Spena, Angelo, 665, 1157
Staehelin, L. Andrew, 447
Steinbiss, Hans-Henning, 133
Stinard, Philip S., 523
Stockhaus, Jörg, 805
Strittmatter, Gunter, 471
Sturtevant, Ann Pizanis, 633
Sunter, Garry, 985
Sussman, Michael R., 953
Suzuki, Hideki, 373, 745

T

Takanami, Yoichi, 1165
Taylor, Brian H., 757
Taylor, William C., 259
Thanh, Vu H., 313
Thomas, Terry L., 855
Thompson, Richard D., 569
Thompson, William F., 681, 691
Thornber, J. Philip, 645
Thornburg, Robert W., 115
Timberlake, William E., 265, 275
Tobin, Elaine M., 159
Togasaki, Robert K., 361
Tonkyn, John C., 645
Töpfer, Reinhard, 133
Tran Thanh Van, Diem, 25
Travis, Jeffrey L., 173
Tregear, Geoffrey, 483
Turner, Nilgun E., 339
Turks, Devon, 1175
Turton, Jane F., 391

U

Ueda, Takashi, 217
Ursin, Virginia M., 727

V

Vancanneyt, Guy, 533
Van Montagu, Marc C., 81, 671
Varner, Joseph E., 479
Vaucheret, Hervé, 1111
Verma, Desh Pal S., 373, 745
Viitanen, Paul V., 1223
Vincentz, Michael, 579
Voelker, Toni A., 95, 609

W

Walbot, Virginia, 301
Ward, Kathy, 471
Watanabe, Hajime, 515
Wen-jun, Shen, 391
Werneke, Jeffrey M., 815
White, Michael J., 681, 691
Wilkins, Thea A., 541
Williams, John G. K., 591
Willmitzer, Lothar, 151, 533, 805, 961
Woessner, Jeffrey P., 901
Woodward, James R., 511
Wu, Madeline, 551

Y

Yamaguchi, Judy, 727
Yang, Junming, 551
Yoshiwoka, Shotaro, 515

Z

Zimmerman, J. Lynn, 1137
Zollinger, Max, 559

The Plant Cell, Vol. 1, iii–xii, December 1989 © 1989 American Society of Plant Physiologists

Subject Index

A

Abscisic acid
W. R. Marcotte, Jr., S. H. Russell, and R. S. Quatrano: Abscisic Acid-Responsive Sequences from the Em Gene of Wheat, 969–976
D. R. McCarty, C. B. Carson, P. S. Stinard, and D. S. Robertson: Molecular Analysis of *viviparous-1*: An Absicisic Acid-Insensitive Mutant of Maize, 523–532

Actin
D. L. Kropf, S. K. Berge, and R. S. Quatrano: Actin Localization during *Fucus* Embryogenesis, 191–200

***S*-Adenosylmethionine synthetase**
J. Peleman, W. Boerjan, G. Engler, J. Seurinck, J. Botterman, T. Alliotte, M. Van Montagu, and D. Inzé: Strong Cellular Preference in the Expression of a Housekeeping Gene of *Arabidopsis thaliana* Encoding *S*-Adenosylmethionine Synthetase, 81–93

Agricultural research
T. Blake: Will American Agricultural Research Continue To Be Productive?, 481

***Agrobacterium*-mediated transformation**
T. Ueda, E. Pichersky, V. S. Malik, and A. R. Cashmore: Level of Expression of the Tomato *rbcS-3A* Gene Is Modulated by a Far Upstream Promoter Element in a Developmentally Regulated Manner, 217–227

Agrobacterium rhizogenes
T. Schmülling, J. Schell, and A. Spena: Promoters of the *rolA*, *B*, and *C* Genes of *Agrobacterium rhizogenes* Are Differentially Regulated in Transgenic Plants, 665–670
A. Spena, R. B. Aalen, and S. C. Schulze: Cell-Autonomous Behavior of the *rolC* Gene of *Agrobacterium rhizogenes* during Leaf Development: A Visual Assay for Transposon Excision in Transgenic Plants, 1157–1164

Agrobacterium tumefaciens
S. M. Leisner and S. B. Gelvin: Multiple Domains Exist within the Upstream Activator Sequence of the Octopine Synthase Gene, 925–936

Alfalfa
M. E. Dudley and S. R. Long: A Non-nodulating Alfalfa Mutant Displays neither Root Hair Curling nor Early Cell Division in Response to *Rhizobium meliloti*, 65–72

Alleles
M. A. Anderson, G. I. McFadden, R. Bernatzky, A. Atkinson, T. Orpin, H. Dedman, G. Tregear, R. Fernley, and A. E. Clarke: Sequence Variability of Three Alleles of the Self-Incompatibility Gene of *Nicotiana alata*, 483–491
T.-J. Cho, C. S. Davies, R. L. Fischer, N. E. Tumer. R. B. Goldberg, and N. C. Nielsen: Molecular Characterization of an Aberrant Allele for the Gy_3 Glycinin Gene: A Chromosomal Rearrangement, 339–350

Anther-specific genes
V. M. Ursin, J. Yamaguchi, and S. McCormick: Gametophytic and Sporophytic Expression of Anther-Specific Genes in Developing Tomato Anthers, 727–736

Anthocyanin
V. L. Chandler, J. P. Radicella, T. P. Robbins, J. Chen, and D. Turks: Two Regulatory Genes of the Maize Anthocyanin Pathway Are Homologous: Isolation of *B* Utilizing *R* Genomic Sequences, 1175–1183

AP2
L. Kunst, J. E. Klenz, J. Martinez-Zapater, and G. W. Haughn: *AP2* Gene Determines the Identity of Perianth Organs in Flowers of *Arabidopsis thaliana*, 1195–1208

Arabidopsis thaliana
J. L. Bowman, D. R. Smyth, and E. M. Meyerowitz: Genes Directing Flower Development in *Arabidopsis*, 37–52
J. Chory, C. A. Peto, M. Ashbaugh, R. Saganich, L. Pratt, and F. Ausubel: Different Roles for Phytochrome in Etiolated and Green Plants Deduced from Characterization of *Arabidopsis thaliana* Mutants, 867–880
P. L. Herman and M. D. Marks: Trichome Development in *Arabidopsis thaliana*. II. Isolation and Complementation of the GLABROUS1 Gene, 1051–1055
L. Kunst, J. E. Klenz, J. Martinez-Zapater, and G. W. Haughn: *AP2* Gene Determines the Identity of Perianth Organs in Flowers of *Arabidopsis thaliana*, 1195–1208
M. D. Marks and K. A. Feldman: Trichome Development in *Arabidopsis thaliana*. I. T-DNA Tagging of the GLABROUS1 Gene, 1043–1050
H.-G. Nam, J. Giraudat, B. den Boer, F. Moonan, W. D. B. Loos, B. M. Hauge, and H. M. Goodman: Restriction Fragment Length Polymorphism Linkage Map of *Arabidopsis thaliana*, 699–705
J. Peleman, W. Boerjan, G. Engler, J. Seurinck, J. Botterman, T. Alliotte, M. Van Montagu, and D. Inzé: Strong Cellular Preference in the Expression of a Housekeeping Gene of *Arabidopsis thaliana* Encoding *S*-Adenosylmethionine Synthetase, 81–93
C. Somerville: *Arabidopsis* Blooms, 1131–1135
J. M. Werneke, J. M. Chatfield, and W. L. Ogren: Alternative mRNA Splicing Generates the Two Ribulosebisphosphate Carboxylase/Oxygenase Activase Polypeptides in Spinach and *Arabidopsis*, 815–825

ASF-2
E. Lam and N.-H. Chua: ASF-2: A Factor That Binds to the Cauliflower Mosaic Virus 35S Promoter and a Conserved GATA Motif in *Cab* Promoters, 1147–1156

Aspergillus nidulans
R. A. Dean and W. E. Timberlake: Production of Cell Wall-Degrading Enzymes by *Aspergillus nidulans*: A Model System for Fungal Pathogenesis, 265–273
R. A. Dean and W. E. Timberlake: Regulation of the *Aspergillus nidulans* Pectate Lyase Gene (*pelA*), 275–284

Auxin
B. A. McClure, G. Hagen, C. S. Brown, M. A. Gee, and T. J. Guilfoyle: Transcription, Organization, and Sequence of an Auxin-Regulated Gene Cluster in Soybean, 229–239

Avenin proteins
R. S. Chesnut, M. A. Shotwell, S. K. Boyer, and B. A. Larkins: Analysis of Avenin Proteins and the Expression of Their mRNAs in Developing Oat Seeds, 913–924

B

Bean
K. E. Broglie, P. Biddle, R. Cressman, and R. Broglie: Functional Analysis of DNA Sequences Responsible for Ethylene Regulation of a Bean Chitinase Gene in Transgenic Tobacco, 599–607
F. Mauch and L. A. Staehelin: Functional Implications of the Subcellular Localization of Ethylene-Induced Chitinase and β-1,3-Glucanase in Bean Leaves, 447–457

B Genome
G. N. Revington, G. Sunter, and D. M. Bisaro: DNA Sequences Essential for Replication of the B Genome Component of Tomato Golden Mosaic Virus, 985–992

***Brassica* gene**
B. A. Lalonde, M. E. Nasrallah, K. G. Dwyer, C.-H. Chen, B. Barlow, and J. B. Nasrallah: A Highly Conserved *Brassica* Gene with Homology to the S-Locus-Specific Glycoprotein Structural Gene, 249–258

Brassica napus
L. Comai, R. A. Dietrich, D. J. Maslyar, C. S. Baden, and J. J. Harada: Coordinate Expression of Transcriptionally Regulated Isocitrate Lyase and Malate Synthase Genes in *Brassica napus* L., 293–300
R. A. Dietrich, D. J. Maslyar, R. C. Heupel, and J. J. Harada: Spatial Patterns of Gene Expression in *Brassica napus* Seedlings: Identification of a Cortex-Specific Gene and Localization of mRNAs Encoding Isocitrate Lyase and a Polypeptide Homologous to Proteinases, 73–80

C

Cab promoter
E. Lam and N.-H. Chua: ASF-2: A Factor That Binds to the Cauliflower Mosaic Virus 35S Promoter and a Conserved GATA Motif in *Cab* Promoters, 1147–1156

Carrot
J. L. Zimmerman, N. Apuya, K. Darwish, and C. O'Carroll: Novel Regulation of Heat Shock Proteins during Carrot Somatic Embryo Development, 1137–1146

Cauliflower mosaic virus 35S
R.-X. Fang, F. Nagy, S. Sivasubramaniam, and N.-H. Chua: Multiple *cis* Regulatory Elements for Maximal Expression of the Cauliflower Mosaic Virus 35S Promoter in Transgenic Plants, 141–150
E. Lam and N.-H. Chua: ASF-2: A Factor That Binds to the Cauliflower Mosaic Virus 35S Promoter and a Conserved GATA Motif in *Cab* Promoters, 1147–1156

cDNA
K. Datta, A. Schmidt, and A. Marcus: Characterization of Two Soybean Repetitive Proline-Rich Proteins and a Cognate cDNA from Germinated Axes, 945–952
C. S. Gasser, K. A. Budelier, A. G. Smith, D. M. Shah, and R. T. Fraley: Isolation of Tissue-Specific cDNAs from Tomato Pistils, 15–24

cDNA clone
D. D. Hanson, D. A. Hamilton, J. L. Travis, D. M. Bashe, and J. P. Mascarenhas: Characterization of a Pollen-Specific cDNA Clone from *Zea mays* and Its Expression, 173–179

Cell division
M. E. Dudley and S. R. Long: A Non-nodulating Alfalfa Mutant Displays neither Root Hair Curling nor Early Cell Division in Response to *Rhizobium meliloti*, 65–72

Cell lineages
E. J. Finnegan, B. H. Taylor, S. Craig, and E. S. Dennis: Transposable Elements Can Be Used To Study Cell Lineages in Transgenic Plants, 757–764

Chalcone synthase promoter
P. Schulze-Lefert, M. Becker-André, W. Schultz, K. Hahlbrock, and J. L. Dangl: Functional Architecture of the Light-Responsive Chalcone Synthase Promoter from Parsley, 707–714

Chaperone
T. H. Lubben, G. K. Donaldson, P. V. Viitanen, and A. A. Gatenby: Several Proteins Imported into Chloroplasts Form Stable Complexes with the GroEL-Related Chloroplast Molecular Chaperone, 1223–1230

Chimeric gene
T. Töpfer, B. Gronenborn, J. Schell, and H.-H. Steinbiss: Uptake and Transient Expression of Chimeric Genes in Seed-Derived Embryos, 133–139

Chimeric polygalacturonase gene
J. J. Giovannoni, D. DellaPenna, A. B. Bennett, and R. L. Fischer: Expression of a Chimeric Polygalacturonase Gene in Transgenic *rin* (Ripening Inhibitor) Tomato Fruit Results in Polyuronide Degradation but not Fruit Softening, 53–63

Chitinase
K. E. Broglie, P. Biddle, R. Cressman, and R. Brogile: Functional Analysis of DNA Sequences Responsible for Ethylene Regulation of a Bean Chitinase Gene in Transgenic Tobacco, 599–607
F. Mauch and L. A. Staehelin: Functional Implications of the Subcellular Localization of Ethylene-Induced Chitinase and β-1,3-Glucanase in Bean Leaves, 447–457

Chlamydomonas
A. D. Blowers, L. Bogorad, K. B. Shark, and J. C. Sanford: Studies on *Chlamydomonas* Chloroplast Transformation: Foreign DNA Can Be Stably Maintained in the Chromosome, 123–132
P. C. L. John, F. J. Sek, and M. G. Lee: A Homolog of the Cell Cycle Control Protein p34*cdc2* Participates in the Division Cycle of *Chlamydomonas*, and a Similar Protein Is Detectable in Higher Plants and Remote Taxa, 1185–1193

Chlamydomonas reinhardtii
J. M. Erickson, K. Pfister, M. Rahire, R. K. Togasaki, L. Mets, and J.-D. Rochaix: Molecular and Biophysical Analysis of Herbicide-Resistant Mutants of *Chlamydomonas reinhardtii*: Structure-Function Relationship of the Photosystem II D1 Polypeptide, 361–371
J. P. Woessner and U. W. Goodenough: Molecular Characterization of a Zygote Wall Protein: An Extensin-Like Molecule in *Chlamydomonas reinhardtii*, 901–911

Chlorophyll *a/b* protein
B. D. Kohorn and E. M. Tobin: A Hydrophobic, Carboxy-Proximal Region of a Light-Harvesting Chlorophyll *a/b* Protein Is Necessary for Stable Integration into Thylakoid Membranes, 159–166
W. C. Taylor: Transcriptional Regulation by a Circadian Rhythm, 259–264

Chloroplast
A. D. Blowers, L. Bogorad, K. B. Shark, and J. C. Sanford: Studies on *Chlamydomonas* Chloroplast Transformation: Foreign DNA Can Be Stably Maintained in the Chromosome, 123–132
X.-W. Deng, J. C. Tonkyn, G. F. Peter, J. P. Thornber, and W. Gruissem: Post-Transcriptional Control of Plastid mRNA Accumulation during Adaptation of Chloroplasts to Different Light Quality Environments, 645–654
J. W. Edwards and G. M. Coruzzi: Photorespiration and Light Act in Concert to Regulate the Expression of the Nuclear Gene for Chloroplast Glutamine Synthetase, 241–248
T. H. Lubben, G. K. Donaldson, P. V. Viitanen, and A. A. Gatenby: Several Proteins Imported into Chloroplasts Form Stable Complexes with the GroEL-Related Chloroplast Molecular Chaperone, 1223–1230

Chloroplast DNA
M. Wu, Z. Q. Nie, and J. Yang: The 18-kD Protein That Binds to the Chloroplast DNA Replicative Origin Is an Iron-Sulfur Protein Related to a Subunit of NADH Dehydrogenase, 551–557

Chromosome
A. D. Blowers, L. Bogorad, K. B. Shark, and J. C. Sanford: Studies on *Chlamydomonas* Chloroplast Transformation: Foreign DNA Can Be Stably Maintained in the Chromosome, 123–132

Circadian rhythm
W. C. Taylor: Transcriptional Regulation by a Circadian Rhythm, 259–264

***cis*-Analysis**
B. Siebertz, J. Logemann, L. Willmitzer, and J. Schell: *cis*-Analysis of the Wound-Inducible Promoter *wun1* in Transgenic Tobacco Plants and Histochemical Localization of Its Expression, 961–968

β-Conglycinin enhancer
R. D. Allen, F. Bernier, P. A. Lessard, and R. N. Beachy: Nuclear Factors Interact with a Soybean β-Conglycinin Enhancer, 623–631

Cotyledon
C. D. Riggs, T. A. Voelker, and M. J. Chrispeels: Cotyledon Nuclear Proteins Bind to DNA Fragments Harboring Regulatory Elements of Phytohemagglutinin Genes, 609–621

C4 plants
T. Nelson and J. A. Langdale: Patterns of Leaf Development in C4 Plants, 3–13

Crassulacean acid
J. C. Cushman, G. Meyer, C. B. Michalowski, ¹. M. Schmitt, and H. J. Bohnert: Salt Stress Leads to Differential Expression of Two Isogenes of Phosphoenolpyruvate Carboxylase during Crassulacean Acid Metabolism Induction in the Common Ice Plant, 715–725

Cruciferae
R.-X. Fang, F. Nagy, S. Sivasubramaniam, and N.-H. Chua: Multiple *cis* Regulatory Elements for Maximal Expression of the Cauliflower Mosaic Virus 35S Promoter in Transgenic Plants, 141–150

Cucumber mosaic virus
C. Masuta and Y. Takanami: Determination of Sequence and Structural Requirements for Pathogenicity of a Cucumber Mosaic Virus Satellite RNA (Y-satRNA), 1165–1173

Cytochrome b_{559} protein
H. B. Pakrasi, B. A. Diner, J. G. K. Williams, and C. J. Arntzen: Deletion Mutagenesis of the Cytochrome b_{559} Protein In-

activates the Reaction Center of Photosystem II, 591–597
Cytokinins
J. I. Medford, R. Horgan, Z. El-Sawi, and Harry J. Klee: Alterations of Endogenous Cytokinins in Transgenic Plants Using a Chimeric Isopentenyl Transferase Gene, 403–413
Cytoplasmic male sterility
H. T. Nivison and M. R. Hanson: Identification of a Mitochondrial Protein Associated with Cytoplasmic Male Sterility in Petunia, 1121–1130

D

Dicot
D. B. Egeland, A. P. Sturtevant, and M. A. Schuler: Molecular Analysis of Dicot and Monocot Small Nuclear RNA Populations, 633–643
Dioecious plant
E. E. Irish and T. Nelson: Sex Determination in Monoecious and Dioecious Plants, 737–744
DNA
A. D. Blowers, L. Bogorad, K. B. Shark, and J. C. Sanford: Studies on *Chlamydomonas* Chloroplast Transformation: Foreign DNA Can Be Stably Maintained in the Chromosome, 123–132
K. E. Broglie, P. Biddle, R. Cressman, and R. Broglie: Functional Analysis of DNA Sequences Responsible for Ethylene Regulation of a Bean Chitinase Gene in Transgenic Tobacco, 599–607
J. J. Harada, S. J. Barker, and R. B. Goldberg: Soybean β-Conglycinin Genes Are Clustered in Several DNA Regions and Are Regulated by Transcriptional and Posttranscriptional Processes, 415–425
G. N. Revington, G. Sunter, and D. M. Bisaro: DNA Sequences Essential for Replication of the B Genome Component of Tomato Golden Mosaic Virus, 985–992
C. D. Riggs, T. A. Voelker, and M. J. Chrispeels: Cotyledon Nuclear Proteins Bind to DNA Fragments Harboring Regulatory Elements of Phytohemagglutinin Genes, 609–621
DNA-binding factor
S. Cordes, J. Deikman, L. J. Margossian, and R. L. Fischer: Interaction of a Developmentally Regulated DNA-Binding Factor with Sites Flanking Two Different Fruit-Ripening Genes from Tomato, 1025–1034

E

Embryo
R. Töpfer, B. Gronenborn, J. Schell, and H.-H. Steinbiss: Uptake and Transient Expression of Chimeric Genes in Seed-Derived Embryos, 133–139
T. A. Wilkins and N. V. Raikhel: Expression of Rice Lectin Is Governed by Two Temporally and Spatially Regulated mRNAs in Developing Embryos, 541–549
J. L. Zimmerman, N. Apuya, K. Darwish, and C. O'Carroll: Novel Regulation of Heat Shock Proteins during Carrot Somatic Embryo Development, 1137–1146
Embryogenesis
D. L. Kropf, S. K. Berge, and R. S. Quatrano: Actin Localization during *Fucus* Embryogenesis, 191–200
L. Perez-Grau and R. B. Goldberg: Soybean Seed Protein Genes Are Regulated Spatially during Embryogenesis, 1095–1109
Em gene
W. R. Marcotte, Jr., S. H. Russell, and R. S. Quatrano: Abscisic Acid-Responsive Sequences from the Em Gene of Wheat, 969–976
Endocytosis
M. A. Horn, P. F. Heinstein, and P. S. Low: Receptor-Mediated Endocytosis in Plant Cells, 1003–1009
Endoplasmic reticulum
G. Iturriaga, R. A. Jefferson, and M. W. Bevan: Endoplasmic Reticulum Targeting and Glycosylation of Hybrid Proteins in Transgenic Tobacco, 381–390
Endosperm
C. R. Lending and B. A. Larkins: Changes in the Zein Composition of Protein Bodies during Maize Endosperm Development, 1011–1023
3′ End regions
I. L. W. Ingelbrecht, L. M. F. Herman, R. A. Dekeyser, M. C. Van Montagu, and A. G. Depicker: Different 3′ End Regions Strongly Influence the Level of Gene Expression in Plant Cells, 671–680
Enhancer elements
J. Stockhaus, J. Schell, and L. Willmitzer: Identification of Enhancer Elements in the Upstream Region of the Nuclear Photosynthetic Gene *ST-LS1*, 805–813
Enzymes
R. A. Dean and W. E. Timberlake: Production of Cell Wall-Degrading Enzymes by *Aspergillus nidulans*: A Model System for Fungal Pathogenesis of Plants, 265–273
Extensin-like molecule
J. P. Woessner and U. W. Goodenough: Molecular Characterization of a Zygote Wall Protein: An Extensin-Like Molecule in *Chlamydomonas reinhardtii*, 901–911

F

Ferredoxin I
R. C. Elliott, L. F. Dickey, M. J. White, and W. F. Thompson: *cis*-Acting Elements for Light Regulation of Pea Ferredoxin I Gene Expression Are Located within Transcribed Sequences, 691–698
R. C. Elliott, T. J. Pedersen, B. Fristensky, M. J. White, L. F. Dickey, and W. F. Thompson: Characterization of a Single Copy Gene Encoding Ferredoxin I from Pea, 681–690
Flower
L. Kunst, J. E. Klenz, J. Martinez-Zapater, and G. W. Haughn: *AP2* Gene Determines the Identity of Perianth Organs in Flowers of *Arabidopsis thaliana*, 1195–1208
Flowering
J. L. Bowman, D. R. Smyth, and E. M. Meyerowitz: Genes Directing Flower Development in *Arabidopsis*, 37–52
J. P. Mascarenhas: The Male Gametophyte of Flowering Plants, 657–664
D. R. Meeks-Wagner, E. S. Dennis, K. Tran Thanh Van, and W. J. Peacock: Tobacco Genes Expressed during in Vitro Floral Initiation and Their Expression during Normal Plant Development, 25–35
Flower development gene
J. L. Bowman, D. R. Smyth, and E. M. Meyerowitz: Genes Directing Flower Development in *Arabidopsis*, 37–52
French bean
M. M. Bustos, M. J. Guiltinan, J. Jordano, D. Begum, F. A. Kalkan, and T. C. Hall: Regulation of β-Glucuronidase Expression in Transgenic Tobacco Plants by an A/T-Rich, *cis*-Acting Sequence Found Upstream of a French Bean β-Phaseolin Gene, 839–853
Fruit
S. Cordes, J. Deikman, L. J. Margossian, and R. L. Fischer: Interaction of a Developmentally Regulated DNA-Binding Factor with Sites Flanking Two Different Fruit-Ripening Genes from Tomato, 1025–1034
J. J. Giovannoni, D. DellaPenna, A. B. Bennett, and R. L. Fischer: Expression of a Chimeric Polygalacturonase Gene in Transgenic *rin* (Ripening Inhibitor) Tomato Fruit Results in Polyuronide Degradation but not Fruit Softening, 53–63
J. O. Narita and W. Gruissem: Tomato Hydroxymethylglutaryl-CoA Reductase Is Required Early in Fruit Development but not during Ripening, 181–190
Fruit-ripening genes
S. Cordes, J. Deikman, L. J. Margossian, and R. L. Fischer: Interaction of a Developmentally Regulated DNA-Binding Factor with Sites Flanking Two Different Fruit-Ripening Genes from Tomato, 1025–1034
Fucus
D. L. Kropf, S. K. Berge, and R. S. Quatrano: Actin Localization during *Fucus* Embryogenesis, 191–200
Fungal infection
E. Schmelzer, S. Krüger-Lebus, and K. Hahlbrock: Temporal and Spatial Patterns of Gene Expression around Sites of Attempted Fungal Infection in Parsley Leaves, 993–1001

Fungal pathogenesis
R. A. Dean and W. E. Timberlake: Production of Cell Wall-Degrading Enzymes by *Aspergillus nidulans*: A Model System for Fungal Pathogenesis of Plants, 265–273

G

Gametophyte
V. M. Ursin, J. Yamaguchi, and S. McCormick: Gametophytic and Sporophytic Expression of Anther-Specific Genes in Developing Tomato Anthers, 727–736

Gene cluster
B. A. McClure, G. Hagen, C. S. Brown, M. A. Gee, and T. J. Guilfoyle: Transcription, Organization, and Sequence of an Auxin-Regulated Gene Cluster in Soybean, 229–239

Gene expression
R. A. Dietrich, D. J. Maslyar, R. C. Heupel, and J. J. Harada: Spatial Patterns of Gene Expression in *Brassica napus* Seedlings: Identification of a Cortex-Specific Gene and Localization of mRNAs Encoding Isocitrate Lyase and a Polypeptide Homologous to Proteinases, 73–80
I. L. W. Ingelbrecht, L. M. F. Herman, R. A. Dekeyser, M. C. Van Montagu, and A. G. Depicker: Different 3′ End Regions Strongly Influence the Level of Gene Expression in Plant Cells, 671–680

Genomic sequences
V. L. Chandler, J. P. Radicella, T. P. Robbins, J. Chen, and D. Turks: Two Regulatory Genes of the Maize Anthocyanin Pathway Are Homologous: Isolation of *B* Utilizing *R* Genomic Sequences, 1175–1183

GLABROUS1 gene
P. L. Herman and M. D. Marks: Trichome Development in *Arabidopsis thaliana*. II. Isolation and Complementation of the GLABROUS1 Gene, 1051–1055
M. D. Marks and K. A. Feldman: Trichome Development in *Arabidopsis thaliana*. I. T-DNA Tagging of the GLABROUS1 Gene, 1043–1050

β-1,3-Glucanase
N. Benhamou, J. Grenier, A. Asselin, and M. Legrand: Immunogold Localization of β-1,3-Glucanases in Two Plants Infected by Vascular Wilt Fungi, 1209–1221
F. Mauch and L. A. Staehelin: Functional Implications of the Subcellular Localization of Ethylene-Induced Chitinase and β-1,3-Glucanase in Bean Leaves, 447–457

β-Glucuronidase
M. M. Bustos, M. J. Guiltnan, J. Jordano, D. Begum, F. A. Kalkan, and T. C. Hall: Regulation of β-Glucuronidase Expression of Transgenic Tobacco Plants by an A/T-Rich, *cis*-Acting Sequence Found Upstream of a French Bean β-Phaseolin Gene, 839–853
E. J. Finnegan, B. H. Taylor, S. Craig, and E. S. Dennis: Transposable Elements Can Be Used To Study Cell Lineages in Transgenic Plants, 757–764

Glutamine synthetase
J. W. Edwards and G. M. Coruzzi: Photorespiration and Light Act in Concert to Regulate the Expression of the Nuclear Gene for Chloroplast Glutamine Synthetase, 241–248
B. G. Forde, H. M. Day, J. F. Turton, S. Wen-jun, J. V. Cullimore, and J. E. Oliver: Two Glutamine Synthetase Genes from *Phaseolus vulgaris* L. Display Contrasting Developmental and Spatial Patterns of Expression in Transgenic *Lotus corniculatus* Plants, 391–401

Glutenin gene
L. S. Robert, R. D. Thompson, and R. B. Flavell: Tissue-Specific Expression of a Wheat High Molecular Weight Glutenin Gene in Transgenic Tobacco, 569–578

Glycan chains
J. R. Woodward, A. Bacic, W. Jahnen, and A. E. Clarke: *N*-Linked Glycan Chains on *S*-Allele-Associated Glycoproteins from *Nicotiana alata*, 511–514

Glycans
T. A. Voelker, E. M. Herman, and M. J. Chrispeels: In Vitro Mutated Phytohemagglutinin Genes Expressed in Tobacco Seeds: Role of Glycans in Protein Targeting and Stability, 95–104

Glyceraldehyde-3-phosphate dehydrogenase gene
D. A. Russell and M. M. Sachs: Differential Expression and Sequence Analysis of the Maize Glyceraldehyde-3-Phosphate Dehydrogenase Gene Family, 793–803

***Glycine max* L.**
H. Suzuki and D. P. S. Verma: Nodule-Specific Kinases Phosphorylating Nuclear Factors in Isolated Nuclei, 373–379

Glycinin
T.-J. Cho, C. S. Davies, and N. C. Nielsen: Inheritance and Organization of Glycinin Genes in Soybean, 329–337
T.-J. Cho, C. S. Davies, R. L. Fischer, N. E. Tumer, R. B. Goldberg, and N. C. Nielsen: Molecular Characterization of an Aberrant Allele for the Gy_3 Glycinin Gene: A Chromosomal Rearrangement, 339–350
C. D. Dickinson, E. H. A. Hussein, and N. C. Nielsen: Role of Posttranslational Cleavage in Glycinin Assembly, 459–469
N. C. Nielsen, C. D. Dickinson, T.-J. Cho, V. H. Thanh, B. J. Scallon, R. L. Fischer, T. L. Sims, G. N. Drews, and R. B. Goldberg: Characterization of the Glycinin Gene Family in Soybean, 313–328

Glycoproteins
W. Jahnen, M. P. Batterham, A. E. Clarke, R. L. Moritz, and R. J. Simpson: Identification, Isolation, and N-Terminal Sequencing of Style Glycoproteins Associated with Self-Incompatibility in *Nicotiana alata*, 493–499
J. R. Woodward, A. Bacic, W. Jahnen, and A. E. Clarke: *N*-Linked Glycan Chains on *S*-Allele-Associated Glycoproteins from *Nicotiana alata*, 511–514

***S*-Glycoprotein**
W. Jahnen, W. M. Lush, and A. E. Clarke: Inhibition of in Vitro Pollen Tube Growth by Isolated *S*-Glycoproteins of *Nicotiana alata*, 501–510

Glyoxylate cycle enzymes
L. Comai, R. A. Dietrich, D. J. Maslyar, C. S. Baden, and J. J. Harada: Coordinate Expression of Transcriptionally Regulated Isocitrate Lyase and Malate Synthase Genes in *Brassica napus* L., 293–300

H

Heat shock genes
J. L. Zimmerman, N. Apuya, K. Darwish, and C. O'Carroll: Novel Regulation of Heat Shock Genes during Carrot Somatic Embryo Development, 1137–1146

Helianthinin
J. Jordano, C. Almoguera, and T. L. Thomas: A Sunflower Helianthinin Gene Upstream Sequence Ensemble Contains an Enhancer and Sites of Nuclear Protein Interaction, 855–866

Herbicide-resistant mutants
J. M. Erickson, K. Pfister, M. Rahire, R. K. Togasaki, L. Mets, and J.-D. Rochaix: Molecular and Biophysical Analysis of Herbicide-Resistant Mutants of *Chlamydomonas reinhardtii*: Structure-Function Relationship of the Photosystem II D1 Polypeptide, 361–371

Housekeeping gene
J. Peleman, W. Boerjan, G. Engler, J. Seurinck, J. Botterman, T. Alliotte, M. Van Montagu, and D. Inzé: Strong Cellular Preference in the Expression of a Housekeeping Gene of *Arabidopsis thaliana* Encoding *S*-Adenosylmethionine Synthetase, 81–93

Hybrid proteins
G. Iturriaga, R. A. Jefferson, and M. W. Bevan: Endoplasmic Reticulum Targeting and Glycosylation of Hybrid Proteins in Transgenic Tobacco, 381–390

Hydroxymethylglutaryl-CoA reductase
J. O. Narita and W. Gruissem: Tomato Hydroxymethylglutaryl-CoA Reductase Is Required Early in Fruit Development but not during Ripening, 181–190

I

Ice plant
J. C. Cushman, G. Meyer, C. B. Michalowski, J. M. Schmitt, and H. J. Bohnert: Salt Stress Leads to Differential Expression of Two Isogenes of Phosphoenlpyruvate Carboxylase during Crassulacean Acid Metabolism Induction in the Common Ice Plant, 715–725

Iron-sulfur protein
M. Wu, Z. Q. Nie, and J. Yang: The 18-kD Protein That Binds to the Chloroplast DNA Replicative Origin Is an Iron-Sulfur Protein Related to a Subunit of NADH Dehydrogenase, 551–557
Isocitrate lyase
L. Comai, R. A. Dietrich, D. J. Maslyar, C. S. Baden, and J. J. Harada: Coordinate Expression of Transcriptionally Regulated Isocitrate Lyase and Malate Synthase Genes in *Brassica napus* L., 293–300
R. A. Dietrich, D. J. Maslyar, R. C. Heupel, and J. J. Harada: Spatial Patterns of Gene Expression in *Brassica napus* Seedlings: Identification of a Cortex-Specific Gene and Localization of mRNAs Encoding Isocitrate Lyase and a Polypeptide Homologous to Proteinases, 73–80
Isopentenyl transferase
J. I. Medford, R. Horgan, Z. El-Sawi, and H. J. Klee: Alterations of Endogenous Cytokinins in Transgenic Plants Using a Chimeric Isopentenyl Transferase Gene, 403–413

K

18-kD protein
M. Wu, Z. Q. Nie, and J. Yang: The 18-kD Protein That Binds to the Chloroplast DNA Replicative Origin Is an Iron-Sulfur Protein Related to a Subunit of NADH Dehydrogenase, 551–557
Kunitz trypsin inhibitor
K. D. Jofuku and R. B. Goldberg: Kunitz Trypsin Inhibitor Genes Are Differentially Expressed during the Soybean Life Cycle and in Transformed Tobacco Plants, 1079–1093
K. D. Jofuku, R. D. Schipper, and R. B. Goldberg: A Frameshift Mutation Prevents Kunitz Trypsin Inhibitor mRNA Accumulation of Soybean Embryos, 427–435

L

Leaf
A. Spena, R. B. Aalen, and S. C. Schulze: Cell-Autonomous Behavior of the *rolC* Gene of *Agrobacterium rhizogenes* during Leaf Development: A Visual Assay for Transposon Excision in Transgenic Plants, 1157–1164
T. Nelson and J. A. Langdale: Patterns of Leaf Development in C4 Plants, 3–13
Light
X.-W. Deng, J. C. Tonkyn, G. F. Peter, J. P. Thornber, and W. Gruissem: Post-Transcriptional Control of Plastid mRNA Accumulation during Adaptation of Chloroplasts to Different Light Quality Environments, 645–654
J. W. Edwards and G. M. Coruzzi: Photorespiration and Light Act in Concert to Regulate the Expression of the Nuclear Gene for Chloroplast Glutamine Synthetase, 241–248
R. C. Elliott, L. F. Dickey, M. J. White, and W. F. Thompson: *cis*-Acting Elements for Light Regulation of Pea Ferredoxin I Gene Expression Are Located within Transcribed Sequences, 691–698
C. Kuhlemeier, G. Strittmatter, K. Ward, and N.-H. Chua: The Pea *rbcS-3A* Promoter Mediates Light Responsiveness but not Organ Specificity, 471–478
P. Schulze-Lefert, M. Becker-André, W. Schultz, K. Hahlbrock, and J. L. Dangl: Functional Architecture of the Light-Responsive Chalcone Synthase Promoter from Parsley, 707–714
Lotus corniculatus
B. G. Forde, H. M. Day, J. F. Turton, S. Wen-jun, J. V. Cullimore, and J. E. Oliver: Two Glutamine Synthetase Genes from *Phaseolus vulgaris* L. Display Contrasting Developmental and Spatial Patterns of Expression in Transgenic *Lotus corniculatus* Plants, 391–401

M

Maize
A. Barkan: Tissue-Dependent Plastid RNA Splicing in Maize: Transcripts from Four Plastid Genes Are Predominantly Unspliced in Leaf Meristems and Roots, 437–445
V. L. Chandler, J. P. Radicella, T. P. Robbins, J. Chen, and D. Turks: Two Regulatory Genes of the Maize Anthocyanin Pathway Are Homologous: Isolation of *B* Utilizing *R* Genomic Sequences, 1175–1183
R. Kodrzycki, R. S. Boston, and B. A. Larkins: The *opaque-2* Mutation of Maize Differentially Reduces Zein Gene Transcription, 105–114
C. R. Lending and B. A. Larkins: Changes in the Zein Composition of Protein Bodies during Maize Endosperm Development, 1011–1023
D. R. McCarty, C. B. Carson, P. S. Stinard, and D. S. Robertson: Molecular Analysis of *viviparous-1*: An Abscisic Acid-Insensitive Mutant of Maize, 523–532
D. A. Russell and M. M. Sachs: Differential Expression and Sequence Analysis of the Maize Glyceraldehyde-3-Phosphate Dehydrogenase Gene Family, 793–803
Malate synthase gene
L. Comai, R. A. Dietrich, D. J. Maslyar, C. S. Baden, and J. J. Harada: Coordinate Expression of Transcriptionally Regulated Isocitrate Lyase and Malate Synthase Genes in *Brassica napus* L., 293–300
Male gametophyte
J. P. Mascarenhas: The Male Gametophyte of Flowering Plants, 657–664
Maturation
N. Brisson, H. Giroux, M. Zollinger, A. Camirand, and C. Simard: Maturation and Subcellular Compartmentation of Potato Starch Phosphorylase, 559–566
Meristems
A. Barkan: Tissue-Dependent Plastid RNA Splicing in Maize: Transcripts from Four Plastid Genes Are Predominantly Unspliced in Leaf Meristems and Roots, 437–445
Mitochondrial protein
H. T. Nivison and M. R. Hanson: Identification of a Mitochondrial Protein Associated with Cytoplasmic Male Sterility in Petunia, 1121–1130
Molecular biology
M. R. Sussman and J. F. Harper: Molecular Biology of the Plasma Membrane of Higher Plants, 953–960
Monocot
D. B. Egeland, A. P. Sturtevant, and M. A. Schuler: Molecular Analysis of Dicot and Monocot Small Nuclear RNA Populations, 633–643
Monoecious plant
E. E. Irish and T. Nelson: Sex Determination in Monoecious and Dioecious Plants, 737–744
mRNA
R. S. Chesnut, M. A. Shotwell, S. K. Boyer, and B. A. Larkins: Analysis of Avenin Proteins and the Expression of Their mRNAs in Developing Oat Seeds, 913–924
X.-W. Deng, J. C. Tonkyn, G. F. Peter, J. P. Thornber, and W. Gruissem: Post-Transcriptional Control of Plastid mRNA Accumulation during Adaptation of Chloroplasts to Different Light Quality Environments, 645–654
D. R. Gallie, W. J. Lucas, and V. Walbot: Visualizing mRNA Expression in Plant Protoplasts: Factors Influencing Efficient mRNA Uptake and Translation, 301–311
K. D. Jofuku, R. D. Schipper, and R. B. Goldberg: A Frameshift Mutation Prevents Kunitz Trypsin Inhibitor mRNA Accumulation in Soybean Embryos, 427–435
J. M. Werneke, J. M. Chatfield, and W. L. Ogren: Alternative mRNA Splicing Generates the Two Ribulosebisphosphate Carboxylase/Oxygenase Activase Polypeptides in Spinach and *Arabidopsis*, 815–825
T. A. Wilkins and N. V. Raikhel: Expression of Rice Lectin Is Governed by Two Temporally and Spatially Regulated mRNAs in Developing Embryos, 541–549
Mutagenesis
H. B. Pakrasi, B. A. Diner, J. G. K. Williams, and C. J. Arntzen: Deletion Mutagenesis of the Cytochrome b_{559} Protein Inactivates the Reaction Center of Photosystem II, 591–597

N

NADH dehydrogenase
M. Wu, Z. Q. Nie, and J. Yang: The 18-kD Protein That Binds to the Chloroplast DNA Replicative Origin Is an Iron-Sulfur

Protein Related to a Subunit of NADH Dehydrogenase, 551–557

Nicotiana alata

M. A. Anderson, G. I. McFadden, R. Bernatzky, A. Atkinson, T. Orpin, H. Dedman, G. Tregear, R. Fernley, and A. E. Clarke: Sequence Variability of Three Alleles of the Self-Incompatibility Gene of *Nicotiana alata*, 483–491

W. Jahnen, M. P. Batterham, A. E. Clarke, R. L. Moritz, and R. J. Simpson: Identification, Isolation, and N-Terminal Sequencing of Style Glycoproteins Associated with Self-Incompatability in *Nicotiana alata*, 493–499

W. Jahnen, W. M. Lush, and A. E. Clarke: Inhibition of in Vitro Pollen Tube Growth by Isolated *S*-Glycoproteins of *Nicotiana alata*, 501–510

J. R. Woodward, A. Bacic, W. Jahnen, and A. E. Clarke: *N*-Linked Glycan Chains on *S*-Allele-Associated Glycoproteins from *Nicotiana alata*, 511–514

Nicotiana plumbaginifolia

S. Pouteau, I. Chérel, H. Vaucheret, and M. Caboche: Nitrate Reductase mRNA Regulation in *Nicotiana plumbaginifolia* Nitrate Reductase-Deficient Mutants, 1111–1120

Nitrate reductase mRNA

S. Pouteau, I. Chérel, H. Vaucheret, and M. Caboche: Nitrate Reductase mRNA Regulation in *Nicotiana plumbaginifolia* Nitrate Reductase-Deficient Mutants, 1111–1120

Nodule-specific kinase

H. Suzuki and D. P. S. Verma: Nodule-Specific Kinases Phosphorylating Nuclear Factors in Isolated Nuclei, 373–379

Nuclear enzyme

T. J. Guilfoyle: A Protein Kinase from Wheat Germ That Phosphorylates the Largest Subunit of RNA Polymerase II, 827–836

Nuclear gene

J. W. Edwards and G. M. Coruzzi: Photorespiration and Light Act in Concert to Regulate the Expression of the Nuclear Gene for Chloroplast Glutamine Synthetase, 241–248

J. Stockhaus, J. Schell, and L. Willmitzer: Identification of Enhancer Elements in the Upstream Region of the Nuclear Photosynthetic Gene *ST-LS1*, 805–813

Nuclear protein

N. Datta and A. R. Cashmore: Binding of a Pea Nuclear Protein to Promoters of Certain Photoregulated Genes Is Modulated by Phosphorylation, 1069–1077

J. Jordano, C. Almoguera, and T. L. Thomas: A Sunflower Helianthinin Gene Upstream Sequence Ensemble Contains an Enhancer and Sites of Nuclear Protein Interaction, 855–866

C. D. Riggs, T. A. Voelker, and M. J. Chrispeels: Cotyledon Nuclear Proteins Bind to DNA Fragments Harboring Regulatory Elements of Phytohemagglutinin Genes, 609–621

H. S. Suzuki and D. P. S. Verma: Nodule-Specific Kinases Phosphorylating Nuclear Factors in Isolated Nuclei, 373–379

O

Oat

M. T. Boylan and P. H. Quail: Oat Phytochrome Is Biologically Active in Transgenic Tomatoes, 765–773

R. S. Chesnut, M. A. Shotwell, S. K. Boyer, and B. A. Larkins: Analysis of Avenin Proteins and the Expression of Their mRNAs in Developing Oat Seeds, 913–924

Octopine synthase

H. Fromm, F. Katagiri, and N.-H. Chua: An Octopine Synthase Enhancer Element Directs Tissue-Specific Expression and Binds ASF-1, a Factor from Tobacco Nuclear Extracts, 977–984

S. M. Leisner and S. B. Gelvin: Multiple Domains Exist within the Upstream Activator Sequence of the Octopine Synthase Gene, 925–936

***opaque*-2**

R. Kodrzycki, R. S. Boston, and B. A. Larkins: The *opaque-2* Mutation of Maize Differentially Reduces Zein Gene Transcription, 105–114

P

Parsley

E. Schmelzer, S. Krüger-Lebus, and K. Hahlbrock: Temporal and Spatial Patterns of Gene Expression around Sites of Attempted Fungal Infection in Parsley Leaves, 993–1001

P. Schulze-Lefert, M. Becker-André, W. Schulz, K. Hahlbrock, and J. L. Dangl: Functional Architecture of the Light-Responsive Chalone Synthase Promoter from Parsley, 707–714

Patatin-like protein

G. Vancanneyt, U. Sonnewald, R. Höfgen, and L. Willmitzer: Expression of a Patatin-like Protein in the Anthers of Potato and Sweet Pepper Flowers, 533–540

Pathogenesis-related protein

H. J. M. Linthorst, R. L. J. Meuwissen, S. Kauffmann, and J. F. Bol: Constitutive Expression of Pathogenesis-Related Proteins PR-1, GRP, and PR-S in Tobacco Has no Effect on Virus Infection, 285–291

T. Lotan, N. Ori, and R. Fluhr: Pathogenesis-Related Proteins Are Developmentally Regulated in Tobacco Flowers, 881–887

Pea

N. Datta and A. R. Cashmore: Binding of a Pea Nuclear Protein to Promoters of Certain Photoregulated Genes Is Modulated by Phosphorylation, 1069–1077

R. C. Elliott, L. F. Dickey, M. J. White, and W. F. Thompson: *cis*-Acting Elements for Light Regulation of Pea Ferredoxin I Gene Expression Are Located within Transcribed Sequences, 691–698

R. C. Elliott, T. J. Pedersen, B. Fristensky, M. J. White, L. F. Dickey, and W. F. Thompson: Characterization of a Single Copy Gene Encoding Ferrodoxin I from Pea, 681–690

Pea *rbcS-3A*

C. Kuhlemeier, G. Strittmatter, K. Ward, and N.-H. Chua: The Pea *rbcS-3A* Promoter Mediates Light Responsiveness but not Organ Specificity, 471–478

Pectate lyase

R. A. Dean and W. E. Timberlake: Regulation of the *Aspergillus nidulans* Pectate Lyase Gene (*pelA*), 275–284

Pectic cell wall

S. Eberhard, N. Doubrava, V. Marfá, D. Mohnen, A. Southwick, A. Darvill, and P. Albersheim: Pectic Cell Wall Fragments Regulate Tobacco Thin-Cell-Layer Explant Morphogenesis, 747–755

Perianth organs

L. Kunst, J. E. Klenz, J. Martinez-Zapater, and G. W. Haughn: *AP2* Gene Determines the Identity of Perianth Organs in Flowers of *Arabidopsis thaliana*, 1195–1208

Petunia

C. Dean, M. Favreau, J. Bedbrook, and P. Dunsmuir: Sequences 5′ to Translation Start Regulate Expression of Petunia *rbcS* Genes, 209–215

C. Dean, M. Favreau, D. Bond-Nutter, J. Bedbrook, and P. Dunsmuir: Sequences Downstream of Translation Start Regulate Quantitative Expression of Two Petunia *rbcS* Genes, 201–208

H. T. Nivison and M. R. Hanson: Identification of a Mitochondrial Protein Associated with Cytoplasmic Male Sterility in Petunia, 1121–1130

***Phaseolus vulgaris* L.**

B. G. Forde, H. M. Day, J. F. Turton, S. Wen-jun, J. V. Cullimore, and J. E. Oliver: Two Glutamine Synthetase Genes from *Phaseolus vulgaris* L. Display Contrasting Developmental and Spatial Patterns of Expression in Transgenic *Lotus corniculatus* Plants, 391–401

β-Phaseolin gene

M. M. Bustos, M. J. Guiltinan, J. Jordano, D. Begum, F. A. Kalkan, and T. C. Hall: Regulation of β-Glucuronidase Expression in Transgenic Tobacco Plants by an A/T-Rich, *cis*-Acting Sequence Found Upstream of a French Bean β-Phaseolin Gene, 839–853

Phosphoenolpyruvate carboxylase

J. C. Cushman, G. Meyer, C. B. Michalowski, J. M. Schmitt, and H. J. Bohnert: Salt Stress Leads to Differential Expression of Two Isogenes of Phosphoenolpyruvate Carboxyl-

ase during Crassulacean Acid Metabolism Induction in the Common Ice Plant, 715–725

Phosphorylation
N. Datta and A. R. Cashmore: Binding of a Pea Nuclear Protein to Promoters of Certain Photoregulated Genes Is Modulated by Phosphorylation, 1069–1077

Photorespiration
J. W. Edwards and G. M. Coruzzi: Photorespiration and Light Act in Concert to Regulate the Expression of the Nuclear Gene for Chloroplast Glutamine Synthetase, 241–248

Photosystem II
H. B. Pakrasi, B. A. Diner, J. G. K. Williams, and C. J. Arntzen: Deletion Mutagenesis of the Cytochrome b_{559} Protein Inactivates the Reaction Center of Photosystem II, 591–597

Photosystem II D1 polypeptide
J. M. Erickson, K. Pfister, M. Rahire, R. K. Togasaki, L. Mets, and J.-D. Rochaix: Molecular and Biophysical Analysis of Herbicide-Resistant Mutants of *Chlamydomonas reinhardtii*: Structure-Function Relationship of the Photosystem II D1 Polypeptide, 361–371

Phytochrome
M. T. Boylan and P. H. Quail: Oat Phytochrome Is Biologically Active in Transgenic Tomatoes, 765–773
J. Chory, C. A. Peto, M. Ashbaugh, R. Saganich, L. Pratt, and F. Ausubel: Different Roles for Phytochrome in Etiolated and Green Plants Deduced from Characterization of *Arabidopsis thaliana* Mutants, 867–880
S. A. Kay, B. Keith, K. Shinozaki, M.-L. Chye, and N.-H. Chua: The Rice Phytochrome Gene: Structure, Autoregulated Expression, and Binding of GT-1 to a Conserved Site in the 5′ Upstream Region, 351–360
S. A. Kay, A. Nagatani, B. Keith, M. Deak, M. Furuya, and N.-H. Chua: Rice Phytochrome Is Biologically Active in Transgenic Tobacco, 775–782

Phytohemagglutinin gene
C. D. Riggs, T. A. Voelker, and M. J. Chrispeels: Cotyledon Nuclear Proteins Bind to DNA Fragments Harboring Regulatory Elements of Phytohemagglutinin Genes, 609–621
T. A. Voelker, E. M. Herman, and M. J. Chrispeels: In Vitro Mutated Phytohemagglutinin Genes Expressed in Tobacco Seeds: Role of Glycans in Protein Targeting and Stability, 95–104

Pisum sativum
J. W. Edwards and G. M. Coruzzi: Photorespiration and Light Act in Concert to Regulate the Expression of the Nuclear Gene for Chloroplast Glutamine Synthetase, 241–248
R. C. Elliott, T. J. Pedersen, B. Fristensky, M. J. White, L. F. Dickey, and W. F. Thompson: Characterization of a Single Copy Gene Encoding Ferredoxin I from Pea, 681–690

Plant cells
M. A. Horn, P. F. Heinstein, and P. S. Low: Receptor-Mediated Endocytosis in Plant Cells, 1003–1009

Plant development
D. R. Meeks-Wagner, E. S. Dennis, K. Tran Thanh Van, and W. J. Peacock: Tobacco Genes Expressed during in Vitro Floral Initiation and Their Expression during Normal Plant Development, 25–35

Plant genes
M. R. Hanson: Tracking Down Plant Genes: Paths, Patterns, and Footprints, 169–172

Plant mitochondria
U. K. Schmitz and D. M. Lonsdale: A Yeast Mitochondrial Presequence Functions as a Signal for Targeting to Plant Mitochondria in Vivo, 783–791

Plant protoplast
D. R. Gallie, W. J. Lucas, and V. Walbot: Visualizing mRNA Expression in Plant Protoplasts: Factors Influencing Efficient mRNA Uptake and Translation, 301–311

Plant science
C. J. Arntzen: Funding for Plant Sciences, 1–2
D. R. Hershey: Plant Scientists Should Promote Plant Science Through Education, 655–656

Plasma membrane
M. R. Sussman and J. F. Harper: Molecular Biology of the Plasma Membrane of Higher Plants, 953–960

Plastid genes
A. Barkan: Tissue-Dependent Plastid RNA Splicing in Maize: Transcripts from Four Plastid Genes Are Predominantly Unspliced in Leaf Meristems and Roots, 437–445

Pollen
W. Jahnen, W. M. Lush, and A. E. Clarke: Inhibition of α^1 in Vitro Pollen Tube Growth by Isolated *S*-Glycoproteins of *Nicotiana alata*, 501–510
J. P. Mascarenhas: The Male Gametophyte of Flowering Plants, 657–664

Polypeptide
R. A. Dietrich, D. J. Maslyar, R. C. Heupel, and J. J. Harada: Spatial Patterns of Gene Expression in *Brassica napus* Seedlings: Identification of a Cortex-Specific Gene and Localization of mRNAs Encoding Isocitrate Lyase and a Polypeptide Homologous to Proteinases, 73–80

Polyuronide
J. J. Giovannoni, D. DellaPenna, A. B. Bennett, and R. L. Fischer: Expression of a Chimeric Polygalacturonase Gene in Transgenic *rin* (Ripening Inhibitor) Tomato Fruit Results in Polyuronide Degradation but not Fruit Softening, 53–63

Post-translational cleavage
C. D. Dickinson, E. H. A. Hussein, and N. C. Nielsen: Role of Post-translational Cleavage in Glycinin Assembly, 459–469

Potato
G. An, A. Mitra, H. K. Choi, M. A. Costa, K. An, R. W. Thornburg, and C. A. Ryan: Functional Analysis of the 3′ Control Region of the Potato Wound-Inducible Proteinase Inhibitor II Gene, 115–122
N. Brisson, H. Giroux, M. Zollinger, A. Camirand, and C. Simard: Maturation and Subcellular Compartmentation of Potato Starch Phosphorylase, 559–566
J. Logemann, S. Lipphardt, H. Lörz, I. Häuser, L. Willmitzer, and J. Schell: 5′ Upstream Sequences from the *wun1* Gene Are Responsible for Gene Activation by Wounding in Transgenic Plants, 151–158
G. Vancanneyt, U. Sonnewald, R. Höfgen, and L. Willmitzer: Expression of a Patatin-like Protein in the Anthers of Potato and Sweet Pepper Flowers, 533–540

Proline-rich protein
K. Datta, A. Schmidt, and A. Marcus: Characterization of Two Soybean Repetitive Proline-Rich Proteins and a Cognate cDNA from Germinated Axes, 945–952
J. C. Hong, R. T. Nagao, and J. L. Key: Developmentally Regulated Expression of Soybean Proline-Rich Cell Wall Protein Genes, 937–943

Protein
B. D. Kohorn and E. M. Tobin: A Hydrophobic, Carboxy-Proximal Region of a Light-Harvesting Chlorophyll *a*/*b* Protein Is Necessary for Stable Integration into Thylakoid Membranes, 159–166
C. R. Lending and B. A. Larkins: Changes in the Zein Composition of Protein Bodies during Maize Endosperm Development, 1011–1023
T. H. Lubben, G. K. Donaldson, P. V. Viitanen, and A. A. Gatenby: Several Proteins Imported into Chloroplasts Form Stable Complexes with the GroEL-Related Chloroplast Molecular Chaperone, 1223–1230

Proteinase inhibitor II gene
G. An, A. Mitra, H. K. Choi, M. A. Costra, K. An, R. W. Thornburg, and C. A. Ryan: Functional Analysis of the 3′ Control Region of the Potato Wound-Inducible Proteinase Inhibitor II Gene, 115–122

Proteinases
R. A. Dietrich, D. J. Maslyar, R. C. Heupel, and J. J. Harada: Spatial Patterns of Gene Expression in *Brassica napus* Seedlings: Identification of a Cortex-Specific Gene and Localization of mRNAs Encoding Isocitrate Lyase and a Polypeptide Homologous to Proteinases, 73–80

Protein kinase
T. J. Guilfoyle: A Protein Kinase from Wheat Germ That Phosphorylates the Largest Subunit of RNA Polymerase II, 827–836
A. C. Harmon: Protein Kinases in Soybean Nuclei, 745

Protein p34*cdc2*
P. C. L. John, F. J. Sek, and M. G. Lee: A Homolog of the Cell Cycle Control Protein p34*cdc2* Participates in the Division Cycle of *Chlamydomonas*, and a Similar Protein Is Detectable in Higher Plants and Remote Taxa, 1185–1193

R

***rbcS* gene**
C. Dean, M. Favreau, D. Bond-Nutter, J. Bedbrook, and P. Dunsmuir: Sequences Downstream of Translation Start Regulate Quantitative Expression of Two Petunia *rbcS* Genes, 201–208
C. Dean, M. Favreau, J. Bedbrook, and P. Dunsmuir: Sequences 5′ to Translation Start Regulate Expression of Petunia *rbcS* Genes, 209–215

***rbcS-3A* gene**
T. Ueda, E. Pichersky, V. S. Malik, and A. R. Cashmore: Level of Expression of the Tomato *rbcS-3A* Gene Is Modulated by a Far Upstream Promoter Element in a Developmentally Regulated Manner, 217–227

Restriction fragment length polymorphism linkage map
H.-G. Nam, J. Giraudat, B. den Boer, F. Moonan, W. D. B. Loos, B. H. Hauge, and H. M. Goodman: Restriction Fragment Length Polymorphism Linkage Map of *Arabidopsis thaliana*, 699–705

Rhizobium meliloti
M. E. Dudley and S. R. Long: A Non-nodulating Alfalfa Mutant Displays neither Root Hair Curling nor Early Cell Division in Response to *Rhizobium meliloti*, 65–72

Ribulose bisphosphate carboxylase
C. Dean, M. Favreau, J. Bedbrook, and P. Dunsmuir: Sequences 5′ to Translation Start Regulate Expression of Petunia *rbcS* Genes, 209–215
C. Dean, M. Favreau, D. Bond-Nutter, J. Bedbrook, and P. Dunsmuir: Sequences Downstream of Translation Start Regulate Quantitative Expression of Two Petunia *rbcS* Genes, 201–208

Ribulosebisphosphate carboxylase/oxygenase activase polypeptides
J. M. Werneke, J. M. Chatfield, and W. L. Ogren: Alternative mRNA Splicing Generates the Two Ribulosebisphosphate Carboxylase/Oxygenase Activase Polypeptides in Spinach and *Arabidopsis*, 815–825

Rice
S. A. Kay, A. Nagatani, B. Keith, M. Deak, M. Furuya, and N.-H. Chua: Rice Phytochrome Is Biologically Active in Transgenic Tobacco, 775–782

Rice lectin
T. A. Wilkins and N. V. Raikhel: Expression of Rice Lectin Is Governed by Two Temporally and Spatially Regulated mRNAs in Developing Embryos, 541–549

Rice phytochrome gene
S. A. Kay, B. Keith, K. Shinozaki, M.-L. Chye, and N.-H. Chua: The Rice Phytochrome Gene: Structure, Autoregulated Expression, and Binding of GT-1 to a Conserved Site in the 5′ Upstream Region, 351–360

rin
J. J. Giovannoni, D. DellaPenna, A. B. Bennett, and R. L. Fischer: Expression of a Chimeric Polygalacturonase Gene in Transgenic *rin* (Ripening Inhibitor) Tomato Fruit Results in Polyuronide Degradation but not Fruit Softening, 53–63

Ripening
J. O. Narita and W. Gruissem: Tomato Hydroxymethylglutaryl-CoA Reductase Is Required Early in Fruit Development but not during Ripening, 181–190

RNA
A. Barkan: Tissue-Dependent Plastid RNA Splicing in Maize: Transcripts from Four Plastid Genes Are Predominantly Unspliced in Leaf Meristems and Roots, 437–445
D. B. Egeland, A. P. Sturtevant, and M. A. Schuler: Molecular Analysis of Dicot and Monocot Small Nuclear RNA Populations, 633–643
C. Masuta and Y. Takanami: Determination of Sequence and Structural Requirements for Pathogenicity of a Cucumber Mosaic Virus Satellite RNA (Y-satRNA), 1165–1173
M. Vincentz and R. B. Flavell: Mapping of Ribsomal RNA Transcripts in Wheat, 579–589

RNA polymerase II
T. J. Guilfoyle: A Protein Kinase from Wheat Germ That Phosphorylates the Largest Subunit of RNA Polymerase II, 827–836

***rolA, B,* and *C* genes**
T. Schmülling, J. Schell, and A. Spena: Promoters of *rolA*, *B*, and *C* Genes of *Agrobacterium rhizogenes* Are Differentially Regulated in Transgenic Plants, 665–670

***rolC* gene**
A. Spena, R. B. Aalen, and S. C. Schulze: Cell-Autonomous Behavior of the *rolC* Gene of *Agrobacterium rhizogenes* during Leaf Development: A Visual Assay for Transposon Excision in Transgenic Plants, 1157–1164

Roots
A. Barkan: Tissue-Dependent Plastid RNA Splicing in Maize: Transcripts from Four Plastid Genes Are Predominantly Unspliced in Leaf Meristems and Roots, 437–445
M. E. Dudley and S. R. Long: A Non-nodulating Alfalfa Mutant Displays neither Root Hair Curling nor Early Cell Division in Response to *Rhizobium meliloti*, 65–72

Rubisco
H. Roy: Rubisco Assembly: A Model System for Studying the Mechanism of Chaperonin Action, 1035–1042

S

Salt stress
J. C. Cushman, G. Meyer, C. B. Michalowski, J. M. Schmitt, and H. J. Bohnert: Salt Stress Leads to Differential Expression of Two Isogenes of Phosphoenolpyruvate Carboxylase during Crassulacean Acid Metabolism Induction in the Common Ice Plant, 715–725

Seed
R. Töpfer, B. Gronenborn, J. Schell, and H.-H. Steinbiss: Uptake and Transient Expression of Chimeric Genes in Seed-Derived Embryos, 133–139

Seedlings
R. A. Dietrich, D. J. Maslyar, R. C. Heupel, and J. J. Harada: Spatial Patterns of Gene Expression in *Brassica napus* Seedlings: Identification of a Cortex-Specific Gene and Localization of mRNAs Encoding Isocitrate Lyase and a Polypeptide Homologous to Proteinases, 73–80

Seed protein gene
L. Perez-Grau and R. B. Goldberg: Soybean Seed Protein Genes Are Regulated Spatially during Embryogenesis, 1095–1109

Self-incompatibility gene
M. A. Anderson, G. I. McFadden, R. Bernatzky, A. Atkinson, T. Orpin, H. Dedman, G. Tregear, R. Fernley, and A. E. Clarke: Sequence Variability of Three Alelles of the Self-Incompatibility Gene in *Nicotiana alata*, 483–491
W. Jahnen, M. P. Batterham, A. E. Clarke, R. L. Moritz, and R. J. Simpson: Identification, Isolation, and N-Terminal Sequencing of Style Glycoproteins Associated with Self-Incompatibility in *Nicotiana alata*, 493–499

Sex determination
E. E. Irish and T. Nelson: Sex Determination in Monoecious and Dioecious Plants, 733–744

S-locus-specific glycoprotein
B. A. Lalonde, M. E. Nasrallah, K. G. Dwyer, C.-H. Chen, B. Barlow, and J. B. Nasrallah: A Highly Conserved *Brassica* Gene with Homology to the S-Locus-Specific Glycoprotein Structural Gene, 249–258

Soybean
R. D. Allen, F. Bernier, P. A. Lessard, and R. N. Beachy: Nuclear Factors Interact with a Soybean β-Conglycinin Enhancer, 623–631
T.-J. Cho, C. S. Davies, and N. C. Nielsen: Inheritance and Organization of Glycinin Genes in Soybean, 329–337
K. Datta, A. Schmidt, and A. Marcus: Characterization of Two Soybean Repetitive Proline-Rich Proteins and a Cognate cDNA from Germinated Axes, 945–952
A. C. Harmon: Protein Kinases in Soybean Nuclei, 745

J. C. Hong, R. T. Nagao, and J. L. Key: Developmentally Regulated Expression of Soybean Proline-Rich Cell Wall Protein Genes, 937–943
K. D. Jofuku and R. B. Goldberg: Kunitz Trypsin Inhibitor Genes Are Differentially Expressed during the Soybean Life Cycle and in Transformed Tobacco Plants, 1079–1093
K. D. Jofuku, R. D. Schipper, and R. B. Goldberg: A Frameshift Mutation Prevents Kunitz Trypsin Inhibitor mRNA Accumulation in Soybean Embryos, 427–435
B. A. McClure, G. Hagen, C. S. Brown, M. A. Gee, and T. J. Guilfoyle: Transcription, Organization, and Sequence of an Auxin-Regulated Gene Cluster in Soybean, 229–239
N. C. Nielsen, C. D. Dickinson, T.-J. Cho, V. H. Thanh, B. J. Scallon, R. L. Fischer, T. L Sims, G. N. Drews, and R. B. Goldberg: Characterization of the Glycinin Gene Family in Soybean, 313–328
L. Perez-Grau and R. B. Goldberg: Soybean Seed Protein Genes Are Regulated Spatially during Embryogenesis, 1095–1109
H. Suzuki and D. P. S. Verma: Nodule-Specific Kinases Phosphorylating Nuclear Factors in Isolated Nuclei, 373–379

Soybean β-conglycinin gene
J. J. Harada, S. J. Barker, and R. B. Goldberg: Soybean β-Conglycinin Genes Are Clustered in Several DNA Regions and Are Regulated by Transcriptional and Posttranscriptional Processes, 415–425

Spinach
X.-W. Deng, J. C. Tonkyn, G. F. Peter, J. P. Thornber, and W. Gruissem: Post-Transcriptional Control of Plastid mRNA Accumulation during Adaptation of Chloroplasts to Different Light Quality Environments, 645–654
J. M. Werneke, J. M. Chatfield, and W. L. Ogren: Alternative mRNA Splicing Generates the Two Ribulosebisphosphate Carboxylase/Oxygenase Activase Polypeptides in Spinach and *Arabidopsis*, 815–82.

Spinach acyl carrier protein-I
M. A. Post-Beittenmiller, K. M. Schmid, and J. B. Ohlrogge: Expression of Holo and Apo Forms of Spinach Acyl Carrier Protein-I in Leaves of Transgenic Tobacco Plants, 889–899

Sporophyte
V. M. Ursin, J. Yamaguchi, and S. McCormick: Gametophytic and Sporophytic Expression of Anther-Specific Genes in Developing Tomato Anthers, 727–736

Starch phosphorylase
N. Brisson, H. Giroux, M. Zollinger, A. Camirand, and C. Simard: Maturation and Subcellular Compartmentation of Potato Starch Phosphorylase, 559–566

Sterility
H. T. Nivison and M. R. Hanson: Identification of a Mitochondrial Protein Associated with Cytoplasmic Male Sterility in Petunia, 1121–1130

Sunflower helianthinin gene
J. Jordano, C. Almoguera, and T. L. Thomas: A Sunflower Helianthinin Gene Upstream Sequence Ensemble Contains an Enhancer and Sites of Nuclear Protein Interaction, 855–866

Sweet pepper flowers
G. Vancanneyt, U. Sonnewald, R. Höfgen, and L. Willmitzer: Expression of a Patatin-like Protein in the Anthers of Potato and Sweet Pepper Flowers, 533–540

Synechocystis
H. B. Pakrasi, B. A. Diner, J. G. K. Williams, and C. J. Arntzen: Deletion Mutagenesis of the Cytochrome b_{559} Protein Inactivates the Reaction Center of Photosystem II, 591–597

T

Thylakoid membranes
B. D. Kohorn and E. M. Tobin: A Hydrophobic, Carboxy-Proximal Region of a Light-Harvesting Chlorophyll *a*/*b* Protein Is Necessary for Stable Integration into Thylakoid Membranes, 159–166

Tobacco
K. E. Broglie, P. Biddle, R. Cressman, and R. Broglie: Functional Analysis of DNA Sequences Responsible for Ethylene Regulation of a Bean Chitinase Gene in Transgenic Tobacco, 599–607
M. M. Bustos, M. J. Guiltinan, J. Jordano, D. Begum, F. A. Kalkan, and T. C. Hall: Regulation of β-Glucuronidase Expression in Transgenic Tobacco Plants by an A/T-Rich, *cis*-Acting Sequence Found Upstream of a French Bean β-Phaseolin Gene, 839–853
S. Eberhard, N. Doubrava, V. Marfà, D. Mohnen, A. Southwick, A. Darvill, and P. Albersheim: Pectic Cell Wall Fragments Regulate Tobacco Thin-Cell-Layer Explant Morphogenesis, 747–755
R.-X. Fang, F. Nagy, S. Sivasubramaniam, and N.-H. Chua: Multiple *cis* Regulatory Elements for Maximal Expression of the Cauliflower Mosaic Virus 35S Promoter in Transgenic Plants, 141–150
H. Fromm, F. Katagiri, and N.-H. Chua: An Octopine Synthase Enhancer Element Directs Tissue-Specific Expression and Binds ASF-1, a Factor from Tobacco Nuclear Extracts, 977–984
L. Hanley-Bowdoin, J. S. Elmer, and S. G. Rogers: Functional Expression of the Leftward Open Reading Frames of the A Component of Tomato Golden Mosaic Virus in Transgenic Tobacco Plants, 1057–1067
G. Iturriaga, R. A. Jefferson, and M. W. Bevan: Endoplasmic Reticulum Targeting and Glycosylation of Hybrid Proteins in Trangenic Tobacco, 381–390
K. D. Jofuku and R. B. Goldberg: Kunitz Trypsin Inhibitor Genes Are Differentially Expressed during the Soybean Life Cycle and in Transformed Tobacco Plants, 1079–1093
S. A. Kay, A. Nagatani, B. Keith, M. Deak, M. Furuya, and N.-H. Chua: Rice Phytochrome Is Biologically Active in Transgenic Tobacco, 775–782
E. Lam and N.-H. Chua: ASF-2: A Factor That Binds to the Cauliflower Mosaic Virus 35S Promoter and a Conserved GATA Motif in *Cab* Promoters, 1147–1156
H. J. M. Linthorst, R. L. J. Meuwissen, S. Kauffmann, and J. F. Bol: Constitutive Expression of Pathogenesis-Related Proteins PR-1, GRP, and PR-S in Tobacco Has No Effect on Virus Infection, 285–291
T. Lotan, N. Ori, and R. Fluhr: Pathogenesis-Related Proteins Are Developmentally Regulated in Tobacco Flowers, 881–887
D. R. Meeks-Wagner, E. S. Dennis, K. Tran Thanh Van, and W. J. Peacock: Tobacco Genes Expressed during in Vitro Floral Initiation and Their Expression during Normal Plant Development, 25–35
M. A. Post-Beittenmiller, K. M. Schmid, and J. B. Ohlrogge: Expression of Holo and Apo Forms of Spinach Acyl Carrier Protein-I in Leaves of Transgenic Tobacco Plants, 889–899
L. S. Robert, R. D. Thompson, and R. B. Flavell: Tissue-Specific Expression of a Wheat High Molecular Weight Glutenin Gene in Transgenic Tobacco, 569–578
B. Siebertz, J. Logemann, L. Willmitzer, and J. Schell: *cis*-Analysis of the Wound-Inducible Promoter *wun1* in Transgenic Tobacco Plants and Histochemical Localization of Its Expression, 961–968

Tobacco mosaic virus
H. J. M. Linthorst, R. L. J. Meuwissen, S. Kauffmann, and J. F. Bol: Constitutive Expression of Pathogenesis-Related Proteins PR-1, GRP, and PR-S in Tobacco Has No Effect on Virus Infection, 285–291

Tobacco seeds
T. A. Voelker, E. M. Herman, and M. J. Chrispeels: In Vitro Mutated Phytohemagglutinin Genes Expressed in Tobacco Seeds: Role of Glycans in Protein Targeting and Stability, 95–104

Tomato
M. T. Boylan and P. H. Quail: Oat Phytochrome Is Biologically Active in Transgenic Tomatoes, 765–773
S. Cordes, J. Deikman, L. J. Margossian, and R. L. Fischer: Interaction of a Developmentally Regulated DNA-Binding Factor with Sites Flanking Two Different Fruit-Ripening Genes from Tomato, 1025–1034
C. S. Gasser, K. A. Budelier, A. G. Smith, D. M. Shah, and R.

T. Fraley: Isolation of Tissue-Specific cDNAs from Tomato Pistils, 15–24
J. J. Giovannoni, D. DellaPenna, A. B. Bennett, and R. L. Fischer: Expression of a Chimeric Polygalacturonase Gene in Transgenic *rin* (Ripening Inhibitor) Tomato Fruit Results in Polyuronide Degradation but not Fruit Softening, 53–63
J. O. Narita and W. Gruissem: Tomato Hydroxymethylglutaryl-CoA Reductase Is Required Early in Fruit Development but not during Ripening, 181–190
T. Ueda, E. Pichersky, V. S. Malik, and A. R. Cashmore: Level of Expression of the Tomato *rbcS-3A* Gene Is Modulated by a Far Upstream Promoter Element in a Developmentally Regulated Manner, 217–227
V. M. Ursin, J. Yamaguchi, and S. McCormick: Gametophytic and Sporophytic Expression of Anther-Specific Genes in Developing Tomato Anthers, 727–736

Tomato golden mosaic virus
L. Hanley-Bowdoin, J. S. Elmer, and S. G. Rogers: Functional Expression of the Leftward Open Reading Frames of the A Component of Tomato Golden Mosaic Virus in Transgenic Tobacco Plants, 1057–1067
G. N. Revington, G. Sunter, and D. M. Bisaro: DNA Sequences Essential for Replication of the B Genome Component of Tomato Golden Mosaic Virus, 985–992

Transposable elements
E. J. Finnegan, B. H. Taylor, S. Craig, and E. S. Dennis: Transposable Elements Can Be Used To Study Cell Lineages in Transgenic Plants, 757–764

Transposon excision
A. Spena, R. B. Aalen, and S. C. Schulze: Cell-Autonomous Behavior of the *rolC* Gene of *Agrobacterium rhizogenes* during Leaf Development: A Visual Assay for Transposon Excision in Transgenic Plants, 1157–1164

Trichome
M. D. Marks and K. A. Feldman: Trichome Development in *Arabidopsis thaliana*. I. T-DNA Tagging of the GLABROUS1 Gene, 1043–1050
P. L. Herman and M. D. Marks: Trichome Development in *Arabidopsis thaliana*. II. Isolation and Complementation of the GLABROUS1 Gene, 1051–1055

V

viviparous-1
D. R. McCarty, C. B. Carson, P. S. Stinard, and D. S. Robertson: Molecular Analysis of *viviparous-1*: An Abscisic Acid-Insensitive Mutant of Maize, 523–532

W

Wheat
W. R. Marcotte, Jr., S. H. Russell, and R. S. Quatrano: Abscisic Acid-Responsive Sequences from the Em Gene of Wheat, 969–976
L. S. Robert, R. D. Thompson, and R. B. Flavell: Tissue-Specific Expression of a Wheat High Molecular Weight Glutenin Gene in Transgenic Tobacco, 569–578
M. Vincentz and R. B. Flavell: Mapping of Ribosomal RNA Transcripts in Wheat, 579–589

Wheat germ
T. J. Guilfoyle: A Protein Kinase from Wheat Germ That Phosphorylates the Largest Subunit of RNA Polymerase II, 827–836

Wilt fungi
N. Benhamou, J. Grenier, A. Asselin, and M. Legrand: Immunogold Localization of β-1,3-Glucanases in Two Plants Infected by Vascular Wilt Fungi, 1209–1221

Wounding
J. Logemann, S. Lipphardt, H. Lörz, I. Häuser, L. Willmitzer, and J. Schell: 5′ Upstream Sequences from the *wun1* Gene Are Responsible for Gene Activation by Wounding in Transgenic Plants, 151–158

wun1
J. Logemann, S. Lipphardt, H. Lörz, I. Häuser, L. Willmitzer, and J. Schell: 5′ Upstream Sequences from the *wun1* Gene Are Responsible for Gene Activation by Wounding in Transgenic Plants, 151–158
B. Siebertz, J. Logemann, L. Willmitzer, and J. Schell: *cis*-Analysis of the Wound-Inducible Promoter *wun1* in Transgenic Tobacco Plants and Histochemical Localization of Its Expression, 961–968

Y

Yeast mitochondria
U. K. Schmitz and D. M. Lonsdale: A Yeast Mitochondrial Presequence Functions as a Signal for Targeting to Plant Mitochrondria in Vivo, 783–791

Z

Zea mays
D. D. Hanson, D. A. Hamilton, J. L. Travis, D. M. Bashe, and J. P. Mascarenhas: Characterization of a Pollen-Specific cDNA Clone from *Zea mays* and Its Expression, 173–179

Zein
R. Kodrzycki, R. S. Boston, and B. A. Larkins: The *opaque-2* Mutation of Maize Differentially Reduces Zein Gene Transcription, 105–114
C. R. Lending and B. A. Larkins: Changes in the Zein Composition of Protein Bodies during Maize Endosperm Development, 1011–1023

Zygote wall protein
J. P. Woessner and U. W. Goodenough: Molecular Characterization of a Zygote Wall Protein: An Extensin-Like Molecule in *Chlamydomonas reinhardtii*, 901–911